

Environmental describer E_{ij}

MEMORANDUM

TO:

DIVISION OF WATER POLLUTION CONTROL - Field Operations Section

FROM:

Larry L. Bishop - Region V

SUBJECT:

PERRY COUNTY - Fidelity Mine #11

United Electric Coal Companies

Mine Drainage

DATE:

September 13, 1974

On the above date, I made an investigation of the United Electric Coal Companies Mine #11, located approximately five miles west of Du Quoin in Perry County. On the date of this investigation, I was accompanied by Mr. Paul Siestrom, Land Reclamation Manager, for United Electric Coal Companies. There was a heavy rain prior to and during the investigation. We first discussed the need for an NPDES Permit in Mr. Siestrom's office before making the field inspection. Mr. Siestrom reported that he has had some trouble with the NPDES Permit program. Further discussion of the NPDES Permit revealed that the problem was encountered when Mr. Siestrom misnamed a creek on the permit application.

The field investigation began at Panther Creek as it flows under a blacktop road in the (NW_4) (NW_4) , Sec. 9, T6S, R2W, 3 P.M. Any pump discharge or wet weather discharge from the active mining operation would flow through this sampling point. The creek at this location was turbid and had a brown color. The creek appeared to be normal, considering the weather conditions. Flow was estimated to be high on this date. Laboratory analysis of the sample collected at this location is listed below:

LAB. #A104697

Iron (Total)	1.8 mg/1	рH	8.0
Manganese	0.2 mg/1	Alkalinity	14 mg/1
Sulfate	1100 mg/1	Total Acidity	10 mg/1
R.O.E.	2038 mg/1	Suspended Solids	160 mg/1

We then returned to the entrance road to the active mining operation and drove south. Along the west edge of the haulage road and north of Route 152, I observed a wet weather drainage, estimated to be 25 gpm. The haulage road was at one time a gob road and has since been covered with white rock. A sample was collected at this location in the north half of Section 16, T6S, R2W, for informational purposes. The water in the drainage course was brown and turbid. Flow was estimated at 25 gpm. Laboratory analyses of the sample collected is listed as follows:

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LAB. #A104698

Iron (Total)	112 mg/1	рH	4.1
Manganese	1.19 mg/1	Alkalinity	0 mg/1
Sulfate	1500 mg/1	Total Acidity	84 mg/1
R.O.E.	2130 mg/1	Suspended Solids	764 mg/1

We then crossed Route 152 and continued to drive south to the alternate gob site for the Fidelity Mine #11. The gob site is located in or near the NW% of Section 22, T6S, R2W, 3 P.M. The alternate gob site is located approximately 3/4 mile northeast of the preparation plant. The main gob site, which is the active pit, is located approximately 4 miles northeast of the preparation plant. There did appear to be an excessive amount of refuse disposal in the alternate site. On the day of this inspection, gob was being hauled back to the alternate site, due to weather conditions. Mr. Siestrom explained that if the refuse is dumped back in the active pit during wet weather conditions, it causes the spoil to slide into the pit. This particular excuse has been given by Mr. Siestrom for excessive use of alternate gob sites at both the Fidelity and Banner Mines. The excuse of the spoils sliding back into the pit has not been given by any other coal company, to my knowledge. I also observed the alternate site was being covered with approximately 4 to 5 feet of overburden material as the area was being filled in. There was an area only large enough to be considered a working area, exposed at the alternate site.

We then proceeded to the United Electric Coal Companies' Beaucoup Creek discharge, which is located on the Route 13 bridge south of the mine. This discharge includes any drainage other than the Barber outlet discharge point and the Lake of the Pines discharge point. On the day of this visit, the water was turbid and had a brown color which would be normal under wet weather conditions. Also, flow was considered to be very high. Laboratory analysis of the sample collected is listed below:

LAB. #A104699

Iron (Total)	2.4 mg/1	ДĦ	7.6
Manganese	0.38 mg/1	Alkalinity	6 mg/1
Sulfate	190 mg/1	Total Acidity	2 mg/1
TS/EC	370 mg/1	Suspended Solids	388 mg/1

We then drove east from the Beaucoup Creek discharge point along Route 13 to the Barber Saw Mill. I walked east from this location to the Barber outlet discharge point and collected a sample. The water in the stream at this point was turbid and had a light gray color. Again, the flow was considered to be very high at this time. Laboratory analysis of the sample collected is listed as follows:

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LAB. #A104700

Iron (Total)	1.3 mg/1	Suspended Solids	56 mg/l
Manganese	2.12 mg/1	pН	7.4
Sulfate	1500 mg/l	Alkalinity	2 mg/1
R.O.E.	2350 mg/1	Total Acidity	2 mg/1

The next sample collected was that of the Lake of the Pines discharge point, which is located approximately 3/4 to 1 mile west of the Barber outlet discharge point along Route 13. At this location, the water was slightly turbid, but did appear normal for the weather conditions. Flow was estimated to be high on this date. Laboratory analysis of the sample collected is listed below:

LAB. #A104701

Iron (Total)	0.4 mg/1	Suspended Solids	28 mg/l
Manganese	0.63 mg/1	pН	7.5
Sulfate	1300 mg/1	Alkalinity	4 mg/l
R.O.E.	2100 mg/1	Total Acidity	1 mg/1

From this location, we drove northeast along the southern boundaries of the mine. I did observe a discharge coming from the mine property, in which a portion of the orchard is located for the Fidelity Farms and observed a discharge that had a light amber color. The stream bed at this location appeared to be normal. The flow was a wet weather discharge estimated to be 100 gpm. A field investigation showed that the discharge was originating from the orchard area. Several spots of amber colored water were observed at this location. Laboratory analysis of the sample collected is listed below:

LAB. #A104702

Iron (Total)	0.2 mg/1	Suspended Solids	7 mg/l
Manganese	0.00 mg/l	pН	6.4
Sulfate	14 mg/l	Alkalinity	0 mg/1
R.O.E.	1850 mg/l	Total Acidity	2 mg/1

Mr. Siestrom stated that the above discharge was only from the orchard area and the area had not been mined and would not be mined for approximately two years. The analysis of the sample collected indicated the water was near an acceptable quality. The discoloration or amber color of the water was not readily explainable at this time.

We then proceeded to the preparation plant and contacted the Mine Superintendent, Al Seiling. At this time, I discussed with Mr. Seiling and Mr. Siestrom, the correction of a spillage discharge originating from the preparation plant water circuit. At one

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time the spillage from the preparation plant flowed along the railroad track and entered a series of pits that did overflow into Panther Creek. Mr. Siestromhad discussed with me the need for obtaining an NPDES Permit for this discharge, since the preparation plant spillage did enter the system. It was decided that due to the nature of the discharge, it was likely this discharge would require an NPDES Permit. Mr. Seiling stated he had done some work to correct the spillage and the discharge was no longer entering the Panther Creek area. A field inspection showed the spillage from the preparation plant is now directed into an abandoned portion of the old preparation plant where it is collected in a sump. The water is then pumped back into the fresh water lake to be recycled. The discharge from the preparation plant is directed north down the railroad track and into the basement of the old preparation plant.

I then continued the investigation of this area and observed there is drainage from the mine yard area, but it is not associated with the spillage from the preparation plant. The drainage is only a wet weather drainage and was sampled for informational purposes. The sample was collected approximately 150 ft. north of the preparation plant. The drainage water was turbid and had a blackish-gray appearance. Flow was estimated to be 15 gpm. Laboratory analysis of the sample collected is listed below:

	LAB		#A	1	04	7	03
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Iron (Total)	5.3 mg/1	Suspended Solids	950 mg/1
Manganese	0.18 mg/1	рН	7.9
Sulfate	1000 mg/1	Alkalinity	85 mg/1
TS/EC	1470 mg/1	Total Acidity	0 mg/1

Mr. Siestrom and I then concluded the investigation by driving to a point north-west of the preparation plant. In this general location, along the haulage road, spoil pits overflow into Panther Creek. This overflow was the point that the preparation plant spillage did discharge at one time. The discharge through this sampling point had a slightly turbid appearance, but seemed normal for the weather conditions. Flow was considered high on this date. Laboratory analysis of the sample collected is listed below:

LAB.	#A104	704

Iron (Total)	0.6 mg/1	·Ησ	7.4
Manganese	3.0 mg/1	•	
R.O.E.	3380 mg/1		
Suspended Solids	10 mg/1		

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To the date of the writing of this report, the final NPDES Permit for the United Electric Coal Companies discharge point has not been issued. When the permits are issued, investigations will be made to determine the exact standing of the coal company with the compliance schedules of the said permit.

Farry L. Bishop

Environmental Protection Specialist

LLB:mgg 10/15/74

Date Collected Sept 13,1714 Collector Larry L Brishop Facility Name: Facility Number: File Town File Town Stream Name(s) Bre Middle Receive, Parther Stream Gode: NCO Source of Sample: (Exact Location) Parther Cause with Nut; Nut; Ser. 9 T(s, 22w, 32m. Physical Observations, Remarks: water turbil and brown clar. Arsenic Coliform/100ml Barium Barium Field Dissolved Oxygen Field pH Field Temp. Arsenic Coliform/100ml Botton Barium Fecal Coliform 100 ml Barium Fecal Coliform 100 ml Cadmium Algae (Total) /ml / 60 Guso-Solids Copper Ammonia (N) Vol. Susp. Solids Chronium (tri) Organic Nitrogen (N) F.O GH (units) Chromium (hex) Nitrate + Nitrite(N) Turbidity (JTU) I. 8 (Ton (Total) Phosphorus (F) Bardness Iron (Dissolved) Chloride / Hisalinity Organic Nickel MBAS Other (Specify) Nickel MBAS Other (Specify) Silver Zinc Received by: Bread Cause Suspension of the Supplementation of th	Time Collected //:00	A.M.		Sub-Basin RE	620N 5
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	3.2 m,			
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Boron		100 m Fecal Strep	nl 2/3	O POLE
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3/73 □ No				

Time Collected 12:	30 P. M.	Sub-Ba	sin REGTON	5
Facility Name:	PT 13,1974 Facilit FOELTT #11	y Number:	tor <u>LARRY</u> File Town PER	L. BISHUP 24 COUNTY
04	G MUDDY, BEAU		Stream Code	
Source of Sample: (•	BEAUCTUP CILE	E14 24 44	e Rt. 13 bridge
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Barium		Fecal Colifo	erm	COD
Boron		100 Fecal Strep	ml S	370 371 (TS/EC)
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		Algae (Total	.) /==	
Copper		Ammonia (N)		Vol. Susp. Solids
Chromi	um (tri)	Organic Nitr	rogen (N)	7.6 (pH (units)
Chromi	um (hex)	Nitrate + Ni	trite(N)	Turbidity (JTU)
2.4 (Iron (Total)	Phosphorus ((P)	Hardness
Iron (Dissolved)	Chloride	-	6 Alkalinity
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otherwise noted.	Transported	by:		forwarded: SEP 2 7 1974
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2/72			20002011.	Supervisor;

Time Collected 15: 45 P.m.	Sub-Bas	sin_REGIO	N 5
Date Collected SMPT 13, 1974 Facility Name: Faci FEDELETT	Collective Number:	File Town	L. BISHOP COUNTY
Stream Name(s) BIG MUDDY. B		Stream Code	
Source of Sample: (Exact Location)		LL DESCH	ARSE
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Physical Observations, Remarks:	at tool 1	دلاسا الغد	era ch
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Boron	100	ml	350 ROE
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Cadmium	Algae (Total	.) /ml	Susp. Solids
Copper	Ammonia (N)		Vol. Susp. Solids
Chromium (tri)	Organic Nitr	ogen (N)	7.4 (units)
Chromium (hex)	Nitrate + Ni	trite(N)	Turbidity (JTU)
	Phosphorus ((P)	Hardness
Iron (Dissolved)	Chloride		2 Alkalinity
Lead	Fluoride		2 Total Acidity
2.12 Manganese	1500 Sulfate		Free Acidity
Mercury (ppb)	Cyanide	-	-
	·		0i1
Nickel	MBAS	*****	Other (Specify)
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desults in mg/1 unless otherwise noted.	rted by:	3	s completed: 4/25/14 forwarded: CED 0 5
Gameia Moota IEPA Recei ve	d by:	1	requested: 8 Tests run:
Preservation Standards Yes		Lab Section:	Supervisor
3/73 No		<u> </u>	



Facility Name: FIDEL3	Facility Number 77 # 11	Collect	File Town PERI Stream Code	L: BISHOP LY COUNTY HE
Flow hah Field	l Dissolved Oxygen		Field pH	Field Temp.
Arsenic		Coliform/100	m1	BOD
Barium		Fecal Colifor		COD
Boron		100 i Fecal Strep	ml	00 ASTE POE
		100 1	m1	28
Cadmium		Algae (Total) /ml	Susp. Solids
Copper	***************************************	_Ammonia (N)		Vol.Susp.Solids
Chromium (tri)	Organic Nitro	ogen (N)	7.5 (ph (units)
Chromium (hex) ,	Nitrate + Ni	trite(N)	Turbidity (JTU)
0.4 (Total)	———	_Phosphorus (P)	Hardness
Iron (Dissolv	ed)	_Chloride	-	4 (Alkalinity)
Lead		_Fluoride		Total Acidity
C.63 Manganese	1300	801fate		Free Acidity
Mercury (ppb)		Cyanide		0i1
Nickel		MBAS		
Selenium				Other (Specify)
		Phenol (ppb)	A104	B LAB USE ONLY
Silver	Transported by	any to stay	Lab Number:	esta: 13 1974 Time: 5: 02
Zinc //	Received by:		· ·	completed: 9/25/74
Results in mg/l unless otherwise noted, the IEPA	Transported by:			forwarded: SEP 2 7 1974
Standards	Received by:		J	equested: Tests run:
∑ Yos □ No	L		Lab Section:_	Supervisor

Time Collected 1:30 P.M.	Sub-Bas	sin REGION	5
Date Collected SEPT 13, 1974		tor LARRY L	BISHOP
Facility Name: Facili FIDELTTY #	ty Number: 	File Town PERRY	Countr
Stream Name(s)	BEAUCOUP	Stream Code:	v c
Source of Sample: (Exact Location)	swt suzz f	am orcher	l aren
	······································		
·			
Physical Observations, Remarks: W	ater had a by	ight anhan co	les.
b	ater had a by		
Flow ~100 gpm Field Dissolved	Oxygen	Field pH	Field Temp.
Arsenic	Coliform/100	ml	BOD
Barium	Fecal Colifo		COD
Boron	100 Fecal Strep	_/85	O FSIEG POE
Cadmium	100 Algae (Total	·	7 Susp. Solids
Copper	Ammonia (N)		Vol. Susp. Solids
Chromium (tri)	Organic Nitr	ogen (N)6,	_
Chromium (hex)	Nitrate + Ni	trite(N)	Turbidity (JTU)
0.2 Yron (Total)	Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride		Alkalinity
Lead	Fluoride	2	(Total Acidity
0.00 Manganese	14 Sulfate	•	Free Acidity
Mercury (ppb)	Cyanide	****	0il
Nickel	MBAS		Other (Specify)
Selenium	Phenol (ppb)	FOR	LAB USE ONLY 7. A
Silver Transporte	ed by: Launt But	Lab Numbel 04'	Rec'd by
Zinc Received t	ру:	Date sample red	6P 13 1974 ime 500
Results in mg/l unless otherwise noted.	ed by:		ompleted: <u>9/15/74</u> rwarded: <u>\$EP 2 7 1974</u>
į –	ру:	Total Tests req	uested: Tests run
Programme Connected		Lab Section:	Supervisor
3/73 📋 No			-

SPECIAL	ANALYSIS	FORM

Time Collected 2: 30 P. M. Date Collected SEPT 13, 1974 Facility Number: FIDELITY # 11 Stream Name(s) BIG MUDDY, BEAUCOUP, PANTHER Source of Sample: (Exact Location) Physical Observations, Remarks: water turbed, block-gray Color.					
Flow ~ 1590m F1	leld Dissolved Oxygen	Field pH	Field Temp.		
Arsenic	(a)	iform/100ml	non		
,		•	BOD		
Barium		al Coliform 100 ml	1470 ZIEC		
Boron	Feca	al'Strep 100 ml	950 STEC		
Cadmium	Alga	ae (Total) /ml	Susp. Solids		
Copper	Ammo	onia (N)	Vol. Susp. Sol'ds		
Chromium (tri)0rga	anic Nitrogen (N)	7.9 (pH (units))		
Chromium (I	hex) ·Nit	rate + Nitrite(N)	Turbidity (JTU)		
5.3 From (Total	1) Pho	spho rus (P)	Hardness		
Iron (Disse		oride			
	•				
Lead	1000	oride	OTotal Acidity		
0./8 Manganese		fate	Free Acidity		
Mercury (pp	b)Cyan	nide	0il		
Nickel	MBAS	s	Other (Specify)		
Selenium	Pher	nol (ppb)	TOP TAR HOLD ON HE		
Silver	Transported by: Lassy	Zale Tab Num	FOR LAB USE ONLY 7		
Zinc	Received by:	171	nple rec96P 13 1974;me:5:0		
Results in mg/1 unless		Date and	alysis completed: 9/25/74		
otherwise noted.	A litalisported by:		sults forwarded: SEP 2 7 197		
. So So Telesco		·····	cion:Supervisor		

Time Collected 1: 45 P.	m,	Sub-Basin_ 2≠	GION 5
Date Collected SEPT Facility Name: FIDELIT	Facility Number:	File	RRY LIBISHUP TOWN FRRY COUNTY
Charles Market No.	BDY BEAVELLD	Ctros	m Code:
Source of Sample: (Exact Lo		La the s	poil pita wast 4
	the and	elat	
	V PUT		
			,
Physical Observations, Rema	arks: water slight	they lustra	
Flow high Field	l Dissolved Oxygen	Field pH	Field Temp.
Arsenic	Colii	form/100m1	BOD
Barium	Fecal	l Coliform	C OD
Boron		100 ml l Strep	3380 POE
Cadmium	·	100 ml = (Total) /ml	
	•	,	8dsp.Solids
Copper		nia (N)	Vol. Susp. Solids
Chromium (tri	Organ Organ	nic Nitrogen (N)	7.9 pH (units)
Chromium (hex)) ·Nitra	atę + Nitrite(N)	Turbidity (JTU)
0.6 Iron (Total)	Phosp	phorus (P)	Hardness
Iron (Dissolve	ed)Chlor	ride	Insus. Alkalinity
Lead	Fluor	ride	Sample potal Acidity
3.0 Manganese	Nosample (Sulfa	ate	Free Acidity
Mercury (ppb)	Cyani	ide	0il
Nickel	MBAS		Other (Specify)
Selenium	Pheno	ol (ppb)	
Silver	Transported by:	I	FOR LAB USE ONLY TO Rec'd by English
Zinc	Received by:	Date sa	imple rest 1: 13 1974 Time: 5 01
Results in mg/l unless	Transported by:		alysis completed: 9/25/74
otherwise noted.		1 1	sults forwarded: SMP 2 7 1974 ests requested: 8 Tests run
X ha	Received by:		tion:Supervisor
3/73			